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1		<u>GHSA PHASE I COUNTRY</u>
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3		PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS
4		
5	GHSA Action Package Indicators	Indicator Capacity Levels
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
7		Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
8		Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
9		Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
10		Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
11	One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
12		Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education
16		Level 1: No mechanism in place

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1	MONTHLY REPORTING TEMPLATE	
2	General Template	
3	P&R – ZD, WD, EOC	
4	FAO –ZD, WD, SURV, BSS, LAB, AMR, EOC	
5	GHSA 5-Year Uganda Country Roadmap Milestones	Key Results
6	<ul style="list-style-type: none"> • Demonstrated capability for identifying 2 of 5 priority zoonotic diseases in humans and 1 of 5 priority zoonotic diseases in animals (Y1) • Demonstrated capability for identifying 3 of 5 priority zoonotic diseases in humans and 2 of 5 priority zoonotic diseases in animals (Y2) • Demonstrated shared network of reporting between animal and human health platform (Y2) 	Reference only - DO NOT FILL
7	<ul style="list-style-type: none"> • Demonstrated capability for identifying 4 of 5 priority zoonotic diseases in humans and 3 of 5 priority zoonotic diseases in animals (Y3) • Demonstrated capability for identifying 5 of 5 priority zoonotic diseases in humans and 4 of 5 priority zoonotic diseases in animals (Y4) 	Reference only - DO NOT FILL
8	<ul style="list-style-type: none"> • Demonstrated capability for identifying 5 of 5 priority zoonotic diseases in animals (Y5) 	Reference only - DO NOT FILL
9	<ul style="list-style-type: none"> • Real-time surveillance/reporting system for veterinary diseases developed and functioning in 80% of districts (Y5) 	Reference only - DO NOT FILL
10	<ul style="list-style-type: none"> • Demonstrated evidence that veterinary and human health trainings incorporate One Health objectives (Y2) 	Reference only - DO NOT FILL
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16	<ul style="list-style-type: none"> • Official One Health platform formally established (Y2). • Successful outbreak response (or drill) of zoonotic disease incorporating wildlife, agriculture and human health personnel (Y3) • Established communication program for healthcare providers on ZD transmission and 	DO NOT

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17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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23			All Other Relevant Updates
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
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30			Surveillance of infections caused by AMR pathogens
31			Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens

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17	<p>prevention (Y3).</p> <ul style="list-style-type: none"> • Evidence of 25% reduction in the time from human outbreak onset to effective response (Y5) 	
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21	<ul style="list-style-type: none"> • 3 year longitudinal study across wildlife, livestock and at-risk human populations to identify pathways for disease emergence completed. (Y4) 	Reference only - DO NOT FILL
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23	<ul style="list-style-type: none"> • Completion of strategic plan, based on one health approach, to combat AMR by national stakeholders (Y1) • Evidence that basic level diagnostic capability established at National Level Laboratory (most likely CPHL/NHL) (Y1) • Demonstrated capacity to routinely detect AMR in humans at national level (Y2) • Final report of National Laboratory Assessment for AMR completed (Y2) • Demonstrated capability to detect AMR at central level National referral (Y3) 	
24	<ul style="list-style-type: none"> • Final report detailing assessment of infection control in Uganda health system (Y3) • Demonstrated timely recognition, diagnosis and timely reporting of AMR in humans. (Y4) 	
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26	<ul style="list-style-type: none"> • Demonstrated AMR laboratory capacity in at least 2 subnational hospitals, including transportation and information reporting (Y4) • Demonstrated early-detection of MDR TB. (Y4) 	
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28	<ul style="list-style-type: none"> • Veterinary laboratory action plan for AMR surveillance developed (Y1) • Functional national multi-sector AMR surveillance system (Y5) 	
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32	ANTIMICROBIAL R		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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34		Antimicrobial stewardship activities	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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39		All Other Relevant Updates	
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42	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures
43			Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
44			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
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33	<ul style="list-style-type: none"> • Developed and disseminated guidelines for infection prevention, prudent use of antibiotics and infection management (Y3) • Preventing AMR spread by multisectoral Antimicrobial Stewardship Plan (Y5) 	Reference only - DO NOT FILL
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39	<ul style="list-style-type: none"> • Establishment of twinning partner for AMR (Y2) 	Reference only - DO NOT FILL
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42	<ul style="list-style-type: none"> • Complete review of biosecurity bill by ministries and relevant stakeholders (Y1) • Biosecurity Bill legislation submitted to Parliament (Y2) • All agents inventoried at BSL-3 laboratories and input into select agent database (Y2) • Initiate inventory of select agents at all other laboratory facilities (Y2) • Approval of Biosecurity Bill legislation by Parliament (Y2) • Complete inventory of select agents at all other laboratory facilities. (Y3) • Licensing of identified facilities containing pathogen collections (Y3) • Begin consolidation of pathogen collections into limited number of licensed facilities. (Y3) • Begin development of framework and authority for monitoring facilities containing pathogen collections (Y3) 	Reference only - DO NOT FILL
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44	<ul style="list-style-type: none"> • Completion of Strategic Action Plan for biosafety and biosecurity (Y4) • Complete consolidation of pathogen collections into limited number licensed facilities (Y4) • Finalize framework and authority for monitoring facilities containing pathogen 	Reference only - DO NOT FILL
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46			Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47			Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
48			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
49	Biosafety and biosecurity training and practices		Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
50			Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually. Training on emergency response procedures provided annually.
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54	All Other Relevant Updates		

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46	<p>collections (Y4)</p> <ul style="list-style-type: none"> • Whole of government national BSS system established (Y5) • National BSS plan approved and disseminated that categorizes risks among indigenous agents and provides guidance on best practices (Y5) • Complete audit of all activities mandated and implemented under biosecurity bill (Y5) 	
47	<ul style="list-style-type: none"> • Biosecurity and biosafety training developed and incorporated into pre-service university curricula. (Y4) 	
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52		Reference only - DO NOT FILL
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55			Level 1: No indicator or event-based surveillance systems in place
56			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
57			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
58			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61			Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62	Surveillance is an interoperable, interconnected, electric real-time reporting system		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted,		Level 1: No reports related to data collection

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55	<ul style="list-style-type: none"> • Selection of 5 Integrated Disease Surveillance and Response (IDSR) key diseases to perform enhanced surveillance (Y1) • Selection of 2 veterinary priority pathogens and perform enhanced surveillance activities (Y1) • Good Emergency Management Practices (GEMP) training and adaptation of USDA outbreak investigation manuals under FAO ECTAD completed (Y1) 	Reference only - DO NOT FILL
56	<ul style="list-style-type: none"> • Completed writing/approval of Integrated Disease Surveillance and Response (IDSR) Strategic Implementation Plan and legal framework for disease surveillance by GOU (Y2) 	Reference only - DO NOT FILL
57	<ul style="list-style-type: none"> • Functioning surveillance system of three core syndromes indicative of public health emergencies (Y5) 	Reference only - DO NOT FILL
58	<ul style="list-style-type: none"> • Sentinel surveillance data translated into regional surveillance policy and recommendations. (Y5) • Official mechanism for communication and collaboration across sectors and between sub-national, national and international levels of authority regarding surveillance of events of public health significance established. (Y5) 	Reference only - DO NOT FILL
59		Reference only - DO NOT FILL
60	<ul style="list-style-type: none"> • Complete assessment of electronic disease surveillance tools and ICT infrastructure in use across the country(Y1) • Uganda District Health Information System (DHIS-2) module created for communication of AFI data to MoH (Y1) • Key recommendations on improvement of electronic disease surveillance system(s) developed by the Government of Uganda (Y2) 	Reference only - DO NOT FILL
62		Reference only - DO NOT FILL
63		Reference only - DO NOT FILL
64		Reference only - DO NOT FILL
65	<ul style="list-style-type: none"> • Surveillance data reported from at least 80% (72) of districts (112) for IDSR diseases (Y2) • Mechanism established for rapid reporting of suspect zoonotic disease across wildlife, livestock, and human health systems. (Y3) • Specimen transportation and DHIS-2 network functioning in at least 80% (72) of districts (112) for IDSR diseases (Y4) • Evidence indicating that suspected outbreaks are notified to central level within two days of surpassing epidemic threshold (Y4) • Evidence of collaborative sharing of acute febrile illness (AFI) data with MoH/VZ 	Reference only - DO NOT FILL

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66	and disseminated		Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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70		All Other Relevant Updates	
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73	STRENGTHENING SYSTEMS (LAB)	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
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76			Level 2: National laboratory system is capable of conducting 1-2 core tests Level 3: National laboratory system is capable of conducting 3-4 core tests Level 4: National laboratory system is capable of conducting five or more of the ten core tests Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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78			Level 1: There are no national laboratory quality standards

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66	Evidence of collaborative sharing of acute febrile illness (AFI) data with MoH (Y2, Y3, Y4, Y5)	
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70	<ul style="list-style-type: none"> Establishment of second acute febrile illness (AFI) study site for AFI project (Y1) Establishment of third AFI study site for AFI project (Y2) Establishment of fourth AFI study site for AFI project (Y3) Establishment of fifth AFI study site for AFI project (Y4) 	Reference only - DO NOT FILL
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73	<ul style="list-style-type: none"> Identify site, establish plan for use of BSL-2 diagnostic lab under Ugandan Wildlife Authority (UWA) (Y1) Containerized BSL-2 lab procured and delivered to UWA site in Queen Elizabeth National Park (Y2) <p>Services policy regarding laboratory services and workforce development for laboratory professionals (Y1)</p> <ul style="list-style-type: none"> National human laboratories capacity mapped (Y1) Mapping of national laboratory capacity for animals (Y2) Establishment of technical capacities and communication of inter-sectorial laboratory services and established plan for surge capacity (Y3) Established algorithms for central laboratory testing and plan for routing procurement of supplies and reagents (Y3) Agreement between UWA, MoH and MAAIF developed for shared use of BSL-2 laboratory; plan for cooperative research projects established (Y3) Implement of cooperative research projects at UWA BSL-2 begins (Y4) Identify 2 IDSR priority diseases and available diagnostic tests for strengthening laboratory diagnostics at regional and national levels (Y1) 	Reference only - DO NOT FILL
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77	<ul style="list-style-type: none"> Evidence of distribution and validation of available rapid diagnostic tests (Y2) Diagnostic capacity established for most common (half of priority list), known IDSR diseases at national level (Y2) Evidence of established diagnostic testing capacity for most common, known (3-4 from priority list) IDSR diseases at sub-national level locations (Y4) Evidence of diagnostic capacity for highest priority zoonotic diseases in animals (Y4) Integration of veterinary and human health surveillance and report systems to promote one health and information sharing (Y3) 	Reference only - DO NOT FILL
78	<ul style="list-style-type: none"> Global health security (GHS) principles integrated into Uganda National Health Laboratory (Y1) Complete stepwise accreditation at 2 regional labs and 3 central labs (Y3) Evidence that central laboratories participate and pass external validation of testing (Y3) Designs for renovations at UVRI, NADDEC, NaLiRRI, UVRI-Arua and Mbale facilities completed (Y2) 	Reference only - DO NOT FILL

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79	LAB	Laboratory Quality System	Level 2: National quality standards have been developed but there is no system for verifying their implementation Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories. Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required. Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is
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83		All Other Relevant Updates	
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86	OPMENT (WD)	Workforce strategy	Level 1: No health workforce strategy exists Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians) Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
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91		Human resources are available to implement IHR/PVS core capacity requirements	Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level Level 3: Multidisciplinary HR capacity is available at national and intermediate level
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79	<ul style="list-style-type: none"> • Renovations started at UVRI, NADDEC, NaLiRRI, UVRI-Arua and Mbale facilities equipment in regional and national laboratories (Y2) • Renovations at UVRI, NADDEC, NaLiRRI, UVRI-Arua and Mbale facilities completed (Y3) 	
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83	<ul style="list-style-type: none"> • Expand national sample transportation network (Y1) • Exercise performed testing current transportation, reporting and laboratory systems (Y4) • Specimen transportation network functioning in at least 80% (72) of districts (112) for IDSR diseases (Y3) 	Reference only - DO NOT FILL
84	<ul style="list-style-type: none"> • Technically competent workforce and integration of laboratory training into University curriculum (e.g. beyond current integration only on veterinary) (Y5) 	
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86	<ul style="list-style-type: none"> • System established for tracking trained individuals and capacities for zoonotic pathogen surveillance in both public health and animal health sectors. (Y1) • Comprehensive PH workforce strategic plan completed. (Y1) • Collaborative plan between Government and Universities for training current and future One Health workforce (Y2) 	
87	<ul style="list-style-type: none"> • OH workforce has been trained in accordance with national OH disease prevention, detection, and response needs (Y5) 	
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91	<ul style="list-style-type: none"> • First-year cohorts of national and district-level clinicians trained in EDP symptom recognition, PPE use and specimen handling (Y1) • First-year cohort of district-level epidemiologists trained (Y1) • Program to train public health veterinarians in place (Y2) • Second-year cohorts of national and district-level clinicians trained in EDP symptom recognition, PPE use and specimen handling (Y2) 	
92	<ul style="list-style-type: none"> • Second-year cohort of district-level epidemiologists trained (Y2) • Curricula and course materials updated to include IHR, PVS, and OH core competencies in pre-service university education. (Y3) 	
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94	WORKFORCE DEVELOPMENT	Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained) Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
95		Level 1: No FETP or applied epidemiology training program established
96		Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)
97		Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement
98		Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement
99		Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding
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104	EMERGENCY OPERATIONS CENTER (EOC)*	Level 1: No exercises have been completed
105		Level 2: Table top exercise has been completed to test systems and decision making
106		Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency
107		Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions

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94	<ul style="list-style-type: none"> • Third-year cohorts of national and district-level clinicians trained in EDP symptom recognition, PPE use and specimen handling (Y3) • Third cohort of district-level epidemiologists trained (Y3) • Rollout of OH Education across participating schools ongoing (Y4) • Animal and human health professionals provided in-service training in requisite one health skills (Y4) 	
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96	<ul style="list-style-type: none"> • FETP: The Public Health Fellowship Program – Field Epidemiology Track (PHFP-FET, i.e., Uganda FETP) is established and starts to respond to public health emergency events such as disease outbreaks. (Y1) 	
97	<ul style="list-style-type: none"> • FETP: Exchange of information with partners occurs in forums such as the FETP Conference, international conferences, epidemiology bulletin, and peer-reviewed journals. PHFP-FET is expanded to include intermediate/basic tiers and other tracks (such as the Laboratory Systems Track) (Y2) 	
98	<ul style="list-style-type: none"> • FETP: The first-cohort fellows are graduated, and placed in key posts in the Ministry of Health and/or National Institute of Public Health (Y3) • FETP: Regional and key district health officers and/or surveillance officers are trained in one of the three tiers of PHFP- FET. (Y4) • FETP: PHFP-FET becomes a permanent mechanism for training highly qualified public health workforce in Uganda. (Y5) 	
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101		Reference only - DO NOT FILL
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104	<ul style="list-style-type: none"> • Evidence of training of outbreak response and incident command system (ICS) for district level rapid response teams (Y1) • Multi-sectoral training completed on ICS to National Task Force for Epidemics. 	
105	<p>Evidence of integration of ICS and EOC functions into NTF (Y1)</p> <ul style="list-style-type: none"> • Exercise performed testing current transportation, reporting and laboratory systems and activation of and coordination of response by EOC (Y2) • NTF and key multi-sectorial staff (including EOC staff) trained on mid-level ICS (Y2) • Core EOC contract staff receive intensive training on ICS including intensive immersion training at CDC EOC in Atlanta (Y2) • At least 25 districts RRT trained on ICS (Y2) • At least 60 total district RRTs trained on ICS (Y3) • Capstone exercise completed testing all developed EOC systems (Y5) • Demonstrated ability to mount a response to a public health emergency in 120 	
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108		Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
109		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place
110		Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)
111	Emergency Operations Centre Operating Procedures and Plans	Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
112		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions
113		Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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115	All Other Relevant Updates	
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118	**Adjustment has been made to the standard JEE language to reflect multisectoral, OH aspect of EPT.	

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108	<p>minutes (Y5)</p> <ul style="list-style-type: none"> Exercise performed testing current transportation, reporting and laboratory systems (Y4) 	
109	<ul style="list-style-type: none"> Evidence of secure buy in at all levels of MoH and Multi sectorial NTF 5 (Y1) MoU between MoH, MAAIF and UWA regarding outbreak response (Y1) 	
110	<ul style="list-style-type: none"> Completion of national plans for response and recovery from public health priority threats exist (includes stockpile plan) (Y3) Evidence of multisectoral collaboration in zoonotic outbreak response. (Y3) Curricula and course materials updated to include emergency outbreak response roles and responsibilities in pre-service university education. (Y3) 	
111	<ul style="list-style-type: none"> Public Health Emergency Operations Center (PHEOC) is an official office within MOH (Y3) Joint information center established and fully functional (Y4) Permanent home for EOC established, and EOC functioning in new space (Y5) 	
112	<ul style="list-style-type: none"> Expansion of “real-time” biosurveillance online DHIS-2 to 10 IDSR priority diseases (Y1) Main national level surveillance and laboratory systems integrated in EOC (Y3) All national level surveillance and laboratory reporting systems are interlinked into EOC system and provide timely information (Y4) 	
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114		Reference only - DO NOT FILL
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13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education
16		Level 1: No mechanism in place

	D	E
1	MONTHLY REPORTING TEMPLATE	
2	General Template	
3	P&R – ZD, WD, EOC	
4	FAO –ZD, WD, SURV, BSS, LAB, AMR, EOC	
5	GHSA 5-Year Kenya Country Roadmap Milestones	Key Results
6	<ul style="list-style-type: none"> Enhanced IDSR linkage for surveillance and response to zoonotic events (Y1) Begin development of map of high risk human/animal interfaces (Y1) Determine burden and risk of priority zoonotic diseases (Y1) Implement research projects on priority diseases that impact human health (Y2) Monitor the burden of zoonotic diseases/pathogens through ongoing sentinel and population-based surveillance (Y2) Establish VIL based surveillance for sudden deaths and abortions and hemorrhagic disease (Y2) 	Reference only - DO NOT FILL
7	<ul style="list-style-type: none"> Mapping of high risk/animal interfaces completed (Y3) Establish in-country diagnostic capacity for the five priority zoonotic diseases (Y3) 	Reference only - DO NOT FILL
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10	<ul style="list-style-type: none"> Rollout of OH curriculum across participating schools ongoing (Y4) OH workforce trained in accordance with national zoonotic disease prevention needs and graduated (Y5) 	Reference only - DO NOT FILL
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15	<ul style="list-style-type: none"> Multi-sectoral coordination mechanism is strengthened for zoonotic disease prevention in coordination with the Kenya (Y1) Develop contingency plans for priority zoonotic diseases (Y2) Initiate priority livestock policy reforms (Y2) 	DO NOT
16		

	A	B	C
17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
20			
21			
22		All Other Relevant Updates	
23			
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
29		Surveillance of infections caused by AMR pathogens	
30			Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
31			Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
32			Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
			Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year

	D	E
17	<ul style="list-style-type: none"> • Develop coordination and communication One Health structures /guidelines for county levels (Y2) • Develop a protocol of data sharing between One Health human and animal sectors (Y3) 	
18	<ul style="list-style-type: none"> • Package of OH "risk reduction" measures targeting high risk practices and behaviors that enable spillover validated (Y3) • Implement existing priority disease prevention/control strategies(rabies, RVF and brucellosis) (Y5) 	
19	<ul style="list-style-type: none"> • Establish 20 new county One Health Units (Y5) • Adopt measured behaviors, policies and/or practices that minimize the spillover of zoonotic diseases from lower animals into human populations. (Y5) 	
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21	<ul style="list-style-type: none"> • Facilitate the acquisition, field trials and registration of available vaccines for priority zoonotic diseases (Y4) 	Reference only - DO NOT FILL
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23		
24	<ul style="list-style-type: none"> • Identify and strengthen AMR laboratory capacity (Y1) • Conducted training and mentorship for national and county laboratories on AMR (human and animal) (Y3) • Identify three of the seven WHO priority AMR pathogens (Y4) • Established at least one reference laboratory capable of identifying at least three of the seven WHO priority AMR (Y4) 	
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28	<ul style="list-style-type: none"> • Implemented National AMR plan for detection and mitigation (Y5) 	
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32	<ul style="list-style-type: none"> • Develop plan for functional multisectoral national surveillance system for monitoring AMR (Y1) • Increase reporting to national surveillance systems for human and animal health (Y1) • Develop laboratory action plan for national and county AMR surveillance (Y2) • Scaled up AMR surveillance to other county hospitals and veterinary laboratories (Y3) • Integrated surveillance framework for AMR for both human and animal health is established (Y5) • Enhanced laboratory capacity for AMR surveillance in human and animal health (Y5) 	

	A	B	C
33	ANTIMICROBIAL STEWARDSHIP	Antimicrobial stewardship activities All Other Relevant Updates	Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
34			Level 1: No national plan for antimicrobial stewardship has been approved
35			Level 2: National plan for antimicrobial stewardship has been approved
36			Level 3: Designated centers are conducting some antimicrobial stewardship practices
37			Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year
38			Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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42			Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities. Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
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47			Level 1: No BSS training or plans are in place

	D	E
33	<ul style="list-style-type: none"> • Develop a national comprehensive plan to combat antimicrobial resistance in human and animal health (Y1) • Develop, review and approve the proposed draft Policy Strategy and implementation plan (Y3) • Disseminated National AMR Strategy, Policy and implementation plan for Kenya (Y4) 	Reference only - DO NOT FILL
34	<ul style="list-style-type: none"> • Develop key AMR messages for stakeholders (Y2) • Assessment of national consumption and prescription patterns for antibiotics in humans and livestock completed (Y2) 	Reference only - DO NOT FILL
35	<ul style="list-style-type: none"> • Standards for safe and appropriate use of antibiotics in livestock husbandry are established (Y3) 	Reference only - DO NOT FILL
36	<ul style="list-style-type: none"> • Monitor antimicrobial stewardship adherence across sectors (Y3) 	Reference only - DO NOT FILL
37	<ul style="list-style-type: none"> • Implement AMR communication strategy (Y3) 	Reference only - DO NOT FILL
38		Reference only - DO NOT FILL
39	<ul style="list-style-type: none"> • Strengthen the infection prevention and control capacity and policy (Y1) • Develop an IPC training plan for pre-service curricula (Y2) 	Reference only - DO NOT FILL
40	<ul style="list-style-type: none"> • Scaled up training for hospitals, county teams, and TOTs on IPC/HAI (Y3, Y4) 	Reference only - DO NOT FILL
41	<ul style="list-style-type: none"> • Communication strategy for IPC and AMR/HAI is fully implemented (Y5) 	Reference only - DO NOT FILL
42	<ul style="list-style-type: none"> • Strengthen national laboratory biosafety and biosecurity system (human and animal sectors) (Y1) • Develop a bio risk management system process, including new tools (Y1) • Develop appropriate standards, guidance and norms relating to biorisk management (Y2) 	Reference only - DO NOT FILL
43	<ul style="list-style-type: none"> • Prepare a comprehensive inventory and reporting of laboratories (including those that store pathogens) engaged in microbiological activities (human, animal, environment laboratories). Inventory will be incorporated to Master Facilities (Y2) • Implement good waste management practices in select labs (Y2) 	Reference only - DO NOT FILL
44	<ul style="list-style-type: none"> • Modernize laboratory facilities to meet international standards for function and security aligned with OIE and WHO (Y3) • Update records of all facilities engaged in microbiological activities (Y3) • Evaluate the inventory control reporting system for efficiency and improvement (Y3) • Disseminate biosafety guidelines to relevant institutions (Y4) 	Reference only - DO NOT FILL
45	<ul style="list-style-type: none"> • Implement biorisk management SOPs (Y4) • Provide a modern, secure zoonotic lab and office complex (Y4) • Implement the updated guidelines in human and animal labs (Y5) • Good waste management practices in 100% of targeted labs (Y5) 	Reference only - DO NOT FILL
46		Reference only - DO NOT FILL
47	<ul style="list-style-type: none"> • Align BS&S curriculum with OH teaching core competencies (Y1) 	Reference only - DO NOT FILL

	A	B	C
48	BIOSAFETY AND BIOSECURITY (Biosafety and biosecurity training and practices	Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
49			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
50			Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
51			Level 5:Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
52			
53	All Other Relevant Updates		
54			
55	Indicator and event-based systems in place		Level 1: No indicator or event-based surveillance systems in place
56			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year

	D	E
48	<ul style="list-style-type: none"> Established biosafety/biosecurity course at University of Nairobi (Y2) Biorisk management training implemented in 30% of relevant labs (Y3) Develop biosafety and biosecurity curriculum for health training institutions (Y4) University pre-service laboratory training implemented in accordance with BS&S needs (Y5) Biorisk management training implemented in 90% of relevant labs (Y5) 	
49		
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52		Reference only - DO NOT FILL
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55	<ul style="list-style-type: none"> Strengthen foundational indicator and event-based surveillance systems (Y1) OH national surveillance strategy is agreed upon by all stakeholders (Y2) Train 10 counties on community-based surveillance (Y2) Train counties on mobile short-message-service based disease alert system (MSoS) reporting of all health events (Y2) Train 20 counties on community-based surveillance (Y2) Train 100% of health officers at POEs on surveillance (Y3) Train 30 counties on community-based surveillance (Y4) 	only - DO NOT
56		

A	B	C
57	SURVEILLANCE (SURV)	Indicator and event-based systems in place Surveillance is an interoperable, interconnected, electric real-time reporting system
58		Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59		Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60		Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61		Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63		Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64		Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65		Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated
66		Level 1: No reports related to data collection Level 2: Sporadic reports related to data collection with delay
67		Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data
68		Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data
69		Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
70		

	D	E
57	<ul style="list-style-type: none"> • Develop technical guidelines on non- disease PHEICs (Y4) • Train 47 counties on community-based surveillance (Y5) 	
58	<ul style="list-style-type: none"> • Strengthened surveillance systems to support IDSR and IHR (Y5) • Established system of tracking/monitoring PHEICs globally and timely information sharing (Y5) 	
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60	<ul style="list-style-type: none"> • Review existing reporting tools in district health information system DHIS, IDSR and OIE systems (Y1) 	
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64	<ul style="list-style-type: none"> • Annually evaluate the early warning system component of the indicator based surveillance (Y1) • Strengthen capacities and gaps in current animal health surveillance systems (Y1) • Assess utilization of IHR decision making instrument and document findings at national level (Y2) • Assess status of event based surveillance in the country (Y2) • Evaluate existing surveillance at POEs and Identify and list conditions and PHEIC for surveillance at POEs (Y2) 	
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70	<ul style="list-style-type: none"> • Build capacity for Port Health Services at Point of Entries (POE) (Y1) 	Reference only - DO NOT FILL

	A	B	C
71		All Other Relevant Updates	
72			
73			Level 1: National laboratory system is not capable of conducting any core tests
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77		Laboratory testing for detection of priority diseases	Level 2: National laboratory system is capable of conducting 1-2 core tests Level 3: National laboratory system is capable of conducting 3-4 core tests Level 4: National laboratory system is capable of conducting five or more of the ten core tests Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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79		Laboratory Quality System	Level 1: There are no national laboratory quality standards Level 2: National quality standards have been developed but there is no system for verifying their implementation Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories. Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required. Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is
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83		All Other Relevant Updates	
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86			Level 1: No health workforce strategy exists

	D	E
71	• Educate POE health workers and stakeholder on border health security issues (Y1)	
72		
73	• Acquire technology and improve capacities of laboratories to conduct surveillance of priority diseases in humans and animals • County facilities able to improve capacity to meet diagnostic and confirmatory laboratory requirements for priority diseases • Increase in number of public health labs able to conduct drug resistance testing • Ability for sub-counties to provide preliminary confirmation of outbreaks • Ability of laboratories to respond to outbreaks and other public health threats timely	
74	• Facilities in high disease outbreak probability areas provided with sample collection supplies, sample packaging materials, personal protection equipment • Conduct lab training of trainers (TOTs) for counties	
75	• Sub-county level lab staff enrolled in basic microbiology training	
76		
77	• Strengthen national public health Quality Management System (QMS) • Roll out integrated National EQA program • Establish agreement between Kenya ministries of Health (MOH) and Agriculture with the identified international reference labs • Enroll ten labs in the Stepwise Laboratory Improvement Process Towards Accreditation (SLIPTA) program • Linkage established between MOH/MALF with international labs	
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82	• Identify public-private partnerships to support a comprehensive specimen transport system	Reference only - DO NOT FILL
83	• Timely delivery of specimens to referral hubs and improved result reporting	
84	• Implement and monitor field-test point-of-collection diagnostics appropriate for screening outbreak specimens	
85		
86	• Progress towards targets in the workforce development plan. (Y1) • Conduct Public Health training needs assessment for the County and National level health personnel (Y1)	

A	B	C
87	Workforce strategy	Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians) Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
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91	Human resources are available to implement IHR/PVS core capacity requirements	Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level Level 3: Multidisciplinary HR capacity is available at national and intermediate level Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained) Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
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96	Applied epidemiology training program in place such as FETP	Level 1: No FETP or applied epidemiology training program established Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level) Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement
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	D	E
87	<ul style="list-style-type: none"> • Identify gaps and develop strategic plan across key stakeholders for the Kenya health workforce to meet IHR and PVS (Y1) • Integrate IHR collaboration in East African Community draft health protocol (Y3) • Evaluation and strengthening of workforce training program (Y4) • One Health workforce has been trained in accordance with national strategic plan (Y5) 	
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91	<ul style="list-style-type: none"> • Develop IMPACT curriculum (Y1) • Develop training curricula for Pre service training for medical and veterinary students (Y1) • Facilitate joint training, investigations and response activities with neighboring countries (Y2) 	Reference only - DO NOT FILL
92	<ul style="list-style-type: none"> • Recruit up to 10 IMPACT fellows (Y2) • In-service training for select cadre of animal and human health professional in requisite One Health Skills (Y2) 	Reference only - DO NOT FILL
93		
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96	<ul style="list-style-type: none"> • Review and launch FELTP Strategic Plan 2014 – 2019 (Y1) • Implement the Basic, intermediate and advance level epidemiology through the FELTP and university training platforms (Y2) • Train relevant personnel in Field Epidemiology via the FELTP program. (Y2) 	Reference only - DO NOT FILL
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A	B	C
100		Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding
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104		Level 1: No exercises have been completed
105		Level 2: Table top exercise has been completed to test systems and decision making Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
106	Emergency Operations Program	
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109		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance) Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
110		
111	Emergency Operations Centre Operating Procedures and Plans	Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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115		
116	All Other Relevant Updates	

	D	E
100		
101		Reference only - DO NOT FILL
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103		
104	<ul style="list-style-type: none"> • Conduct risk assessments to identify high risk areas for disease outbreaks and other public health events (Y1) • Response to zoonotic disease outbreaks strengthened (Y1) • Conduct one emergency preparedness tabletop or other exercise (Y1) • Stand up national EOC (Y2) • Conduct at least one emergency preparedness tabletop or other exercise (Y2) • Conduct at least one emergency preparedness tabletop or other exercise (Y3) • Trained rapid Response teams at all levels on IDSR, IHR, Rapid Response to PHEICS (Y4) 	<i>Reference only - DO NOT FILL</i>
105		
106		
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109	<ul style="list-style-type: none"> • Develop a draft policy for emergency management in the health sector (Y1) • Develop national framework for Emergency Operations Centre (Y1) • Review national regulations and laws enabling public health emergency management and define the mission of public health EOC (Y1) • OH "preparedness" framework for a multi-sectoral rapid response capabilities in EOCs developed (Y1) 	<i>Reference only - DO NOT FILL</i>
110	<ul style="list-style-type: none"> • OH "preparedness" framework for a multi-sectoral rapid response to reports of disease "outbreaks" implemented (Y3) • Mapping of resources for emergency preparedness and response (Y3) • Finalize contingency plans(pre-outbreak and outbreak control plan) for priority zoonotic diseases (Y4) 	<i>Reference only - DO NOT FILL</i>
111		
112	<ul style="list-style-type: none"> • A plan for management and distribution of national stockpiles developed (Y4) • Sustained OH "preparedness" for multi-sectoral rapid response to reports of disease "outbreaks" (Y3, Y4) • National stockpile for responding to PHEICS established (Y5) • National capacity for OH "preparedness" in place(Y5) 	<i>Reference only - DO NOT FILL</i>
113		
114		Reference only - DO NOT FILL
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	A	B	C
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118	**Adjustment has been made to the standard JEE language to reflect multisectoral nature of the economy.		

	D	E
117		
118	oral, OH aspect of EPT.	

	A	B	C
1		<u>GHSA PHASE I COUNTRY</u>	
2		G	
3		PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS	
4			
5	GHSA Action Package Indicators	Indicator Capacity Levels	
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place	
7		Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place	
8		Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern	
9		Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern	
10		Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement	
11		Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.	
12		Level 2: Country has one health workforce capacity (with animal health experts) within the national public health	
13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.	
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.	
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education	
16		Level 1: No mechanism in place	

	D	E
1	Y MONTHLY REPORTING TEMPLATE	
2	General Template	
3	P&R – ZD, WD, EOC	
4	FAO –ZD, WD, SURV, BSS, LAB, AMR, EOC	
5	GHSA 5-Year Ethiopia Country Roadmap Milestones	Key Results
6	<ul style="list-style-type: none"> • Five zoonotic diseases identified and prioritized in participatory manner with FMOH, FMOLFRD, and EWCA (Y1) • Surveillance and report sharing initiated for priority diseases (Y2) • 4 regional surveillance centers established for wildlife and domestic animals based at national parks (Y3) 	Reference only - DO NOT FILL
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10	<ul style="list-style-type: none"> • Training curriculum developed for veterinary FETP track (Y1) 	Reference only - DO NOT FILL
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12		
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14		
15	<ul style="list-style-type: none"> • One Health Coordination Taskforce re-established (Y1) • Diagnostic capacity strengthened for priority diseases at human and animal laboratories (Y2) 	DO NOT
16	<ul style="list-style-type: none"> • One Health institutionalized and National One Health legislation developed (Y2) 	DO NOT

	A	B	C
17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
20			
21			
22			
23			All Other Relevant Updates
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
29	Surveillance of infections caused by AMR pathogens		Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
30			Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved
31			Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens
32			Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year

	D	E
17	<ul style="list-style-type: none"> National control strategies for prioritized zoonotic diseases developed (Y3) Progressive control programs for three selected priority diseases started (Y4) Implementation of control programs started for all five priority zoonotic diseases (Y5) 	
18		
19		
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21		Reference only - DO NOT FILL
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24	<ul style="list-style-type: none"> Training program for diagnostics and reporting of AMR initiated at national and regional levels (Y1) 40% of designated hospitals have AMR laboratory diagnostic capacity (Y2) 70% of designated hospitals have AMR laboratory diagnostic capacity (Y3) 100% of designated hospitals have AMR laboratory diagnostic capacity (Y4) 	Reference only - DO NOT FILL
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29	<ul style="list-style-type: none"> AMR surveillance capacity assessed (Y1) AMR surveillance established at pilot or representative regional and referral hospitals (Y1) AMR surveillance strengthened at national and regional levels, including for TB/HIV (Y2) All designated/selected hospitals/laboratories have enrolled in the national AMR surveillance system/network (Y4) 	Reference only - DO NOT FILL
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	A	B	C
33	ANTIMICROBIAL STEWARDSHIP		Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
34			Level 1: No national plan for antimicrobial stewardship has been approved
35			Level 2: National plan for antimicrobial stewardship has been approved
36			Level 3: Designated centers are conducting some antimicrobial stewardship practices
37			Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year
38			Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
39		All Other Relevant Updates	
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42	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place
43			Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures
44			Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
45			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.

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33	<ul style="list-style-type: none"> National AMR advisory committee updated and strengthened (Y1) National AMR strategy revised and endorsed for implementation, and previous AMR stewardship program updated (Y1) Pre- and post-marketing Quality Assurance (QA) program/capacity developed at national and regional level (for human and animal) (Y2) Programs developed for prudent use of antimicrobials and safe practices in intensive livestock production systems (Y2) 	
34	<ul style="list-style-type: none"> Awareness of AMR increased at all hospitals (Y4) 	
35	<ul style="list-style-type: none"> Assessment and evaluation of the impact of AMR policy and strategy conducted (Y5) 	
36	<ul style="list-style-type: none"> AMR stewardship program fully implemented (Y5) 	
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39	<ul style="list-style-type: none"> Infection prevention and control training initiated in 50% of designated hospitals (Y3) Twinning agreement established with other country in collaborative effort to combat AMR resistance (Y3) 	Reference only - DO NOT FILL
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41	<ul style="list-style-type: none"> Infection prevention and control training initiated in 100% of designated hospitals (Y4) 	
42	<ul style="list-style-type: none"> National multi-sector team established for biosafety and biosecurity (Y1) Ethiopia's select agent and toxins (SAT) list drafted and published (Y1) Biosecurity legislation and guidelines reviewed and developed (Y1) Strengthened Biosafety and Biosecurity Department (Y1) Biosecurity legislation and guidelines endorsed (Y2) Inventory of facilities housing or with potential to house dangerous pathogens created (Y2) Licensing, certification, registration and tracking of dangerous pathogens established (Y2) Priority human health labs (Biosafety Level [BSL] 2+ and BSL3) upgraded with biosecurity measures (Y3) 50% of biosafety cabinets certified locally (Y3) 	Reference only - DO NOT FILL
43	<ul style="list-style-type: none"> Facility identified for disposal of dangerous pathogens (Y3) Technologies that can replace culture methods identified (Y3) Team to administer and enforce BSS oversight for human and veterinary labs operationalized (Y4) 	Reference only - DO NOT FILL
44	<ul style="list-style-type: none"> 80% of biosafety cabinets certified locally (Y4) 80% of designated health, vet, and environment labs have an identified and certified biosafety/biosecurity officer (Not all health, vet, and environmental labs may need a BSS officer because their biosafety level can be managed by current lab technicians. 	Reference only - DO NOT FILL
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A	B	C
46		Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47		Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins. Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
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49	Biosafety and biosecurity training and practices	Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above. Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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54	All Other Relevant Updates	

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46	<p>Criteria to designate labs will be developed.) (Y4)</p> <ul style="list-style-type: none"> • Previously identified (Year 4) technologies to replace cultures are implemented (Y4) • 100% of biosafety cabinets certified locally (Y5) • 100% of designated health, vet, and environment labs have an identified and certified biosafety/biosecurity officer (Y5) 	
47	<ul style="list-style-type: none"> • Expand training opportunities for animal and human health labs on BSS (Y1) 	
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54		Reference only - DO NOT FILL

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55		Level 1: No indicator or event-based surveillance systems in place
56		Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
57		Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
58		Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59		Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60	Indicator and event-based systems in place	Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61		Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62	Surveillance is an interoperable, interconnected, electric real-time reporting system	Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63		Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64		Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65	Analysis of surveillance data for priority	Level 1: No reports related to data collection

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55	<ul style="list-style-type: none"> • Veterinary sentinel surveillance sites established for 19 diseases at 300 pilot locations (Y1) • Routine information shared among ministries, and following an outbreak/field investigation (Y2) • Event-based surveillance system formalized (Y2) • Standard data capture tool development completed (Y2) • Standard data capture tool has been tested, piloted, and initial phase of implementation has begun (Y3) 	Reference only - DO NOT FILL
56	<ul style="list-style-type: none"> • Surveillance in wildlife enhanced (Y3) • Veterinary sentinel surveillance sites established for 19 diseases at 1350 pilot locations (Y3) 	Reference only - DO NOT FILL
57	<ul style="list-style-type: none"> • Veterinary sentinel surveillance sites established for 19 diseases at 1750 pilot locations (Y4) 	Reference only - DO NOT FILL
58	<ul style="list-style-type: none"> • Veterinary sentinel surveillance sites established for 19 diseases at 3600 pilot locations (Y5) 	Reference only - DO NOT FILL
59	<ul style="list-style-type: none"> • Agreement with neighboring countries for cross border surveillance reached (Y5) • sentinel surveillance sites established for 19 diseases at 3600 pilot locations (Y5) 	Reference only - DO NOT FILL
60	<ul style="list-style-type: none"> • Data systems in use and interoperability among different ministries assessed (Y1) • 30% of health facilities implemented Electronic Health Management System or Public Health Emergency Management (eHMIS/PHEM) system (Y2) 	Reference only - DO NOT FILL
61	<ul style="list-style-type: none"> • HIT graduates employed in 30% of health facilities in every region (Y2) • Human and animal lab diagnostic data have achieved interoperability (Y4) • Linked electronic data system of agriculture, hospital, and regional labs established (Y5) 	Reference only - DO NOT FILL
62	<ul style="list-style-type: none"> • Server housing database of timely reported and complete surveillance data created (Y5) • 100% of health facilities implemented eHMIS/PHEM system (Y5) 	Reference only - DO NOT FILL
63		Reference only - DO NOT FILL
64		Reference only - DO NOT FILL
65	<ul style="list-style-type: none"> • Integrated Disease Surveillance and Response (IDSR) evaluation tool reviewed and a decision made whether or how to implement (Y1) • Gaps identified in current animal health surveillance systems (Y1) • Comprehensive training on analytical software and methods implemented for PHEM officers and health informaticians (Total trained over five years: 200) (Y5) 	Reference only - DO NOT FILL

A	B	C
66	disease/syndrome is analyzed, interpreted, and disseminated	Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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72	All Other Relevant Updates	
STRENGTHENING SYSTEMS (LAB)		Level 1: National laboratory system is not capable of conducting any core tests
	Laboratory testing for detection of priority diseases	
		Level 2: National laboratory system is capable of conducting 1-2 core tests Level 3: National laboratory system is capable of conducting 3-4 core tests Level 4: National laboratory system is capable of conducting five or more of the ten core tests Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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73	<ul style="list-style-type: none"> • Develop plan of diagnostic upgrades in prioritized labs, including regional animal health diagnostic labs. (Y1) • Framework established for sample referral system (including specimen collection and transport) and data sharing within and across health, regulatory and veterinary labs (Y1) • Architectural and engineering plans for the national reference lab developed (Y1) • Centralized media production met needs of regional health labs (Y2) • Microbiology Proficiency Test (PT) provided to 14 regional health labs with 85% passing (Y2) • All regional labs electronically networked to national lab information systems (human and animal) (Y2) • System for supply of veterinary biologicals, chemicals, and reagents established (Y2) • FMOLFRD engineering team established for scientific equipment maintenance (possible to use in health/environment labs) (Y2) • Centralized media production expanded to meet needs for Addis Ababa and all regional health labs (Y3) • Microbiology PT provided to 20 health labs (13 regional and 7 hospital) with 85% passing • 50% of labs have equipment maintenance within Ethiopia (preventive) (Y3) • Hospitals electronically networked through information systems to regional labs (Y3) • Mobile lab strengthened for testing of epidemic samples (Y3) • Centralized media production met needs of all health labs (Y4) 	Reference only - DO NOT FILL
74	<ul style="list-style-type: none"> • 80% of labs have equipment maintenance within Ethiopia (preventive) (Y4) 	
75	<ul style="list-style-type: none"> • Microbiology PT provided to 30 health labs with 85% passing (Y4) • Health centers electronically networked to regional labs through Lab Information Management Systems (Y4) 	
76	<ul style="list-style-type: none"> • Diagnostic upgrades completed in prioritized labs (Y4) • 100% of labs have equipment maintenance within Ethiopia (preventive) (Y5) 	
77	<ul style="list-style-type: none"> • Microbiology PT provided to 40 health labs with 85% passing (Y5) • Lab information system linked to the national surveillance system (Y5) 	

	A	B	C
78	LAB STRE	Laboratory Quality System	Level 1: There are no national laboratory quality standards Level 2: National quality standards have been developed but there is no system for verifying their implementation Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories. Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
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83		All Other Relevant Updates	
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86	OPMENT (WD)	Workforce strategy	Level 1: No health workforce strategy exists Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians) Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
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91		Human resources are available to implement IHR/PVS core capacity requirements	Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level Level 3: Multidisciplinary HR capacity is available at national and intermediate level
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78	• Capacity of EPHI, EFMHACA and veterinary reference lab (NAHDIC) strengthened to meet international regulations (Y1)	Reference only - DO NOT FILL
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86	• Training curriculum (relevant to GHSA) reviewed for primary care, health information technology (HITs), laboratory, and veterinary professionals (Y1)	Reference only - DO NOT FILL
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91	• 15 public health veterinarians graduated (Y2) • Training (relevant to GHSA) revised for primary care and health informatics (Y2) • 20 public health veterinarians graduated (Y3) • One Health training curriculum evaluated and revised to enhance global health security aspects (Y3)	Reference only - DO NOT FILL
92	• 30 public health veterinarians graduated (Y4) • 40 public health veterinarians graduated (Y5)	
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	A	B requirements	C
94	WORKFORCE DEVELOPMENT	Applied epidemiology training program in place such as FETP	Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained) Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
95			Level 1: No FETP or applied epidemiology training program established
96			Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)
97			Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement
98			Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement
99			Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding
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104	EMERGENCY OPERATIONS CENTER (EOC)*	Emergency Operations Program	Level 1: No exercises have been completed
105			Level 2: Table top exercise has been completed to test systems and decision making
106			Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency
107			Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions

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96	<ul style="list-style-type: none"> • FETP training expanded to include 7 new universities (Y1) • 100 trainees graduated from basic level FETP; 60 graduated from expanded FETP (or .13 per 200,000 population) (Y1) • Universities hosting Field Epidemiology Training Programs (FETP) linked to One Health University platform effort (Y1) 	
97	<ul style="list-style-type: none"> • 120 field epidemiologists graduated (cumulative 180, or .38 per 200,000 population) (Y2) • 150 field epidemiologists graduated (cumulative 330, or .70 per 200,000 population) (Y3) 	
98	<ul style="list-style-type: none"> • 150 field epidemiologists graduated (cumulative 480, 1.02 per 200,000 population) (Y4) • 150 field epidemiologists graduated (cumulative 630, or 1.33 per 200,000) (Y5) 	
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101		Reference only - DO NOT FILL
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104	<ul style="list-style-type: none"> • Core staff trained on emergency management; 2 people trained in advanced emergency management (Y1) • National public health EOC upgraded (Y2) 	
105	<ul style="list-style-type: none"> • 2 EOC staff trained on advanced emergency management (Y2, Y3) • 1 Regional EOC established and staff trained on emergency management (Y3) • Inter-ministerial exercise conducted and After Action Report (AAR) completed (Y3) • 1 Regional EOC established and staff trained on emergency management (Y4) • 2 EOC staff trained on advanced emergency management (Y4) 	
106	<ul style="list-style-type: none"> • 1 Regional EOC established and staff trained on emergency management (Total of public health EOCs established and functioning in 4 regions + national) (Y5) • Cross-border exercise conducted and AAR completed (Y5) 	
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A	B	C
108		Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
109		Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place
110		Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)
111	Emergency Operations Centre Operating Procedures and Plans	Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner
112		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions
113		Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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118	**Adjustment has been made to the standard JEE language to reflect multisectoral approach	

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109	<ul style="list-style-type: none"> • Emergency Action Plan (EAP) developed (Y1) • Standard Operating Procedures and protocols developed for public health EOC (Y1) • Plan for infrastructure updates developed, including plans for livestock quarantine facilities, biosecurity in farms, border posts, check posts, etc. (Y1) • EOC multi-agency coordination group established at the national level (Y2) • EOC multi-agency coordination group established in 4 regions (Y3) 	Reference only - DO NOT FILL
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118	Editorial, OH aspect of EPT.	

	A	B	C
1		GHSA PHASE I COUNTRY MO	
2		General	
3		PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS	
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5	GHSA Action Package Indicators	Indicator Capacity Levels	
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement	
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11	One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities. Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system. Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels. Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels. Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing	
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ZOONOTIC DISEASE (ZD)			

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1	MONTHLY REPORTING TEMPLATE	
2	I Template	
3	P&R – ZD, WD, EOC	
4	FAO –ZD, WD, SURV, BSS, LAB, AMR, EOC	
5	GHSA 5-Year Tanzania Country Roadmap Milestones	Key Results
6	<ul style="list-style-type: none"> • One Health (OH) Strategy drafted; including identification of priority zoonotic diseases (Y1) • OH Strategy operationalized, ensuring plan is sensitized across, sectors, ministries, and OH networks (Y2) • Continue progress on implementation of the OH Strategic Plan (Y3) • Zoonotic disease transmission assessed and enabling behaviors and practices identified (Y2) 	Reference only - DO NOT FILL
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11	<ul style="list-style-type: none"> • Universities review existing curriculum and training strategies across participating schools to align with OH teaching core competencies (Y1) • Curriculum and training strategies for pre-service across participating schools are aligned with OH teaching core competency needs and integrated into university programs (Y2) • OH workforce trained in accordance with national zoonotic disease prevention needs (Y5) 	Reference only - DO NOT FILL
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	A	B	C
16	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 1: No mechanism in place
17			Level 2: National policy, strategy or plan for the response to zoonotic events is in place
18			Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is
19			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
20			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
29	Surveillance of infections caused by AMR pathogens		Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved
30			Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved

	D	E
16	<ul style="list-style-type: none"> • Framework for improving capacity at all levels for preparedness to respond to zoonotic disease outbreak developed (Y2) • Cost effective and efficient OH coordinating Unit established in the DMD PMO's office (Y3) 	Reference only - DO NOT FILL
17	<ul style="list-style-type: none"> • Package of OH risk reduction measures targeting high risk practices and behaviors that enable spillover validated and made ready for implementation (Y3) 	Reference only - DO NOT FILL
18	<ul style="list-style-type: none"> • Package of OH risk reduction measures targeting high risk practices and behaviors that enable spillover implemented (Y4) 	Reference only - DO NOT FILL
19	<ul style="list-style-type: none"> • Demonstrated ability to respond, communicate and coordinate in an integrated fashion to zoonotic disease outbreaks (Y4) • National, Regional and District OH coordination units established and functional (Y5) 	Reference only - DO NOT FILL
20	<ul style="list-style-type: none"> • A mechanism to facilitate and collaborate OH activities with relevant ministries, agencies and other organizations established (Y5) 	Reference only - DO NOT FILL
21		Reference only - DO NOT FILL
22		Reference only - DO NOT FILL
23		Reference only - DO NOT FILL
24	<ul style="list-style-type: none"> • National and zonal lab capacity assessed with the goal of strengthening capacity to routinely detect at least three (3) AMR pathogens (Y1) • Provide on-site training and mentoring at national lab to address gaps in technical capacity, ensure sustainability of lab systems/supplies, and improve accuracy of AMR data (Y2) • Capacity to detect at least three (3) of the WHO priority AMR pathogens at national level laboratory demonstrated (Y3) • Capacity to detect all seven (7) of the WHO priority AMR pathogens at national level laboratory demonstrated (Y4) 	Reference only - DO NOT FILL
25		Reference only - DO NOT FILL
26		Reference only - DO NOT FILL
27		Reference only - DO NOT FILL
28	<ul style="list-style-type: none"> • National AMR surveillance strategy development initiated (Y1) • National AMR surveillance strategy completed (Y4) • Capacity to conduct AMR surveillance the WHO AMR priority pathogens demonstrated (Y5) 	Reference only - DO NOT FILL
29		Reference only - DO NOT FILL
30		Reference only - DO NOT FILL

	A	B	C
31	ANTIMICROBIAL RESISTANCE		Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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34			Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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42			Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
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34	<ul style="list-style-type: none"> • Shared understanding of risk among key stakeholders for AMR based on existing evidence on use of antibiotics for growth promotion in livestock developed (Y1) • Consensus reached among stakeholders on standards for safe and appropriate use of antibiotics in livestock husbandry (Y3) • Select clinical facility(ies) served by the pilot laboratory(ies) to assess general infection control practices, antimicrobial use patterns, and accessibility of clinical cultures. Conduct baseline assessment(s) to identify gaps related to containment of AMR pathogens. (Y3) • Provide on-site mentorship to design and implement infection prevention and control interventions in selected clinical sites. (Y5) 	
35	<ul style="list-style-type: none"> • Public-private sector stakeholder partnership taking initial steps to implement safe and appropriate uses of antibiotics in livestock husbandry (Y4) 	
36	<ul style="list-style-type: none"> • Develop a quality improvement plan in selected clinical facility(ies) to optimize antimicrobial drug use and strengthen infection control practices (Y4) 	
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38	<ul style="list-style-type: none"> • Agricultural industry adopting safe and appropriate use of Antibiotics in livestock husbandry (Y5) 	
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42	<ul style="list-style-type: none"> • Capacity for biosafety and biosecurity among key staff strengthened (human and animal health) (Y1) • Laboratories identified and capacities in BSS assessed (Y1) • National biorisk management (BRM) strategic plan development initiated (Y2) 	
43	<ul style="list-style-type: none"> • BRM legislation drafted (Y3) • Funding, oversight, enforcement mechanisms in place to support National BRM practices (Y4) 	
44	<ul style="list-style-type: none"> • Lab BSS capacities upgraded in compliance with OIE and WHO standards (Y4) • Whole of government implementation of BRM (Y5) 	
45	<ul style="list-style-type: none"> • Lab BSS capacities in animal labs in accordance with WHO and IHR 	

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46	BIOSAFETY AND BIOSECURITY (BSS)	Biosafety and biosecurity training and practices	Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47			Level 1: No BSS training or plans are in place
48			Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
49			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
50			Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
51			Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually.
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54		All Other Relevant Updates	

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46	standards and consistent with national needs (Y5)	
47	<ul style="list-style-type: none"> • Existing curriculum and training strategies for BS&S across participating universities reviewed to align with OH teaching core competencies (Y2) • National BRM training plan established (Y3) • BRM training rolled out in priority regions (Y3) • Curriculum and training strategies for pre-service training are aligned with OH teaching core competencies and integrated into participating university programs (Y3) 	
48	<ul style="list-style-type: none"> • Curriculum and educational strategies revised to meet BSS workforce needs (Y4) • Pre-service laboratory workforce trained in accordance with BSS needs (Y5) 	
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52		Reference only - DO NOT FILL
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55		Level 1: No indicator or event-based surveillance systems in place
56	Indicator and event-based systems in place	Level 2: Indicator and event-based surveillance system(s) planned to begin within a year Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
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60		Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61		Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
62	Surveillance is an interoperable, interconnected, electric real-time reporting system	Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international
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65	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted, and disseminated	Level 1: No reports related to data collection Level 2: Sporadic reports related to data collection with delay
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55	<ul style="list-style-type: none"> • Review, revision and dissemination of country IDSR guidelines completed and ensure it reaches regional/district level (Y1) • Weaknesses in human and animal health surveillance systems prioritized and addressed with national authorities (Y2) • OH national surveillance strategy is agreed upon by all stakeholders (Y2) • In-service surveillance teams trained and deployed in accordance with OH national strategy (Y3) 	Reference only - DO NOT FILL
56	<ul style="list-style-type: none"> • Sentinel surveillance integrated into national system (i.e. IDSR) (Y4) 	Reference only - DO NOT FILL
57	<ul style="list-style-type: none"> • Integrated zoonotic disease surveillance system established at national, zonal/regional and district levels (Y4) 	Reference only - DO NOT FILL
58	<ul style="list-style-type: none"> • Integrated disease surveillance system and response fully functional with attributes meeting minimum standards (Y5) • Presence of trained surveillance officer in 90% of priority region health management teams (Y5) 	Reference only - DO NOT FILL
59		Reference only - DO NOT FILL
60		Reference only - DO NOT FILL
61		Reference only - DO NOT FILL
62		Reference only - DO NOT FILL
63		Reference only - DO NOT FILL
64		Reference only - DO NOT FILL
65	<ul style="list-style-type: none"> • Assessments of capacities and gaps in human and animal surveillance systems ongoing (Y2) • Capacities and gaps in current human and animal health surveillance system identified and plans for strengthening agreed upon with national authorities (Y1) • Ability to monitor and respond to key indicators of significant public health events enhanced (Y2) • Surveillance data attributes strengthened in priority regions (timeliness, availability, completeness, etc.) (Y3) 	Reference only - DO NOT FILL
66	<ul style="list-style-type: none"> • Data reporting and communications channels between 	Reference only - DO NOT FILL

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67			Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data
68			Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data
69			Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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73			All Other Relevant Updates
74			Laboratory testing for detection of priority diseases
75			Level 1: National laboratory system is not capable of conducting any core tests
76			Level 2: National laboratory system is capable of conducting 1-2 core tests
77			Level 3: National laboratory system is capable of conducting 3-4 core tests
78			Level 4: National laboratory system is capable of conducting five or more of the ten core tests
79			Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
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81			Laboratory Quality System
82			Level 1: There are no national laboratory quality standards
83			Level 2: National quality standards have been developed but there is no system for verifying their implementation
84			Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
85			Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
			Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.
			All Other Relevant Updates

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67	systems/district/national levels strengthened (Y3) • Animal health surveillance and outbreak reporting across priority districts strengthened (Y4)	
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70		Reference only - DO NOT FILL
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73	• Improve infrastructure in country to insure BSL 3 laboratories appropriately handle/store of specimens and strengthen diagnostic capacity for especially dangerous pathogens (including integrating modern diagnostic assays where appropriate) (Y1) • Regional laboratories assessed for diagnosis of select epidemic-prone diseases/ IDSR, OIE Priority Disease, and national zoonotic priority diseases. (Y1) • Lab capacity including specimen transport at the National Reference Laboratory and three (3) selected high risk regions (Y2)	
74	• Plan in place to strengthen animal health laboratories for diagnosis of priority zoonotic diseases (Y2)	
75	• Revised National Health Laboratory Strategic Plan in place to include outbreak preparedness and response (including budget) and linked with animal health laboratory plans (Y3)	
76	• National Health Laboratory Strategic Plan and outbreak response strategy implemented in 50% of 9 priority regions (Y4)	
77		
78	• Supply chain management and quality assurance systems introduced (Y4) • National Laboratory System capable of meeting quality assurance standards, testing and reporting in a timely, fashion for epidemic prone/IDSR Priority Diseases achieved in 80% of nine (9) priority regions (Y5) • Enhance zoonotic disease diagnostic capacity at national (100%), zonal/regional (60%) and district (30%) levels by ensuring quality assured testing and timely reporting for priority zoonotic diseases (Y5)	
79	• Supply chain management and quality assurance systems in place (Y5)	
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83		Reference only - DO NOT FILL
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86	Workforce strategy	Level 1: No health workforce strategy exists
87		Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
88		Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
89		Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
90		Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
91	Human resources are available to implement IHR/PVS core capacity requirements	Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
92		Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
93		Level 3: Multidisciplinary HR capacity is available at national and intermediate level
94		Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)
95		Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
96	Applied epidemiology training program in place	Level 1: No FETP or applied epidemiology training program established
97		Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)
98		Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement

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86	<ul style="list-style-type: none"> • Shared vision among national leadership and key stakeholders (MOHSW and MOLFD) for OH workforce (Y1) • Existing pre-service education strategies across participating universities aligned with OH core competencies (Y2) 	Reference only - DO NOT FILL
87	<ul style="list-style-type: none"> • Workforce strategy for MOHSW, MOLFD, and other OH stakeholders established and linked with pre-service university training. (Y2) • National policies and regulations for OH workforce core-competencies and composition harmonized (Y3) 	
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91	<ul style="list-style-type: none"> • Database of trained staff for each sector for public health events developed and/or supported (Y2) • Cadre of bio-surveillance workforce, to include veterinarians, laboratory technicians, Epidemiologists, and biomedical engineers expanded to help achieve the goal of training one epidemiologist per 200,000 population and one veterinarian per 300,000 (Y3, Y4, Y5) • University and government linkages and aligned curriculum with workforce needs strengthened (Y3) 	Reference only - DO NOT FILL
92	<ul style="list-style-type: none"> • Curriculum and training strategies for pre-service across participating universities aligned with OH teaching core competency needs and integrated into programs (Y3) 	
93	<ul style="list-style-type: none"> • Animal and human health professionals provided in-service training in requisite OH skills (Y3) • Rollout of OH education across participating schools ongoing (Y4, Y5) • Animal and human health professionals provided in-service training in requisite OH skills (Y4) 	Reference only - DO NOT FILL
94	<ul style="list-style-type: none"> • Trained public health workforce in multi-sectoral collaboration strengthened. (Y5) 	
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96	<ul style="list-style-type: none"> • FETP Basic and Advanced (Years 1-5) implemented and continued, respectively, to improve progress towards 1 trained epidemiologist per 200,000 population (Y1) • FETP Intermediate (Years 2-5) launched (Y1) • Three tier field epidemiology and laboratory training program fully implemented (Y3, Y4, Y5) 	Reference only - DO NOT FILL
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99		Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding
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103	All Other Relevant Updates	
104	Emergency Operations Program	Level 1: No exercises have been completed
105		Level 2: Table top exercise has been completed to test systems and decision making
106		Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency
107		Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions
108		Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented
109	Emergency Operations Centre Operating Procedures and Plans	Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place
110		Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)
111		Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison
112		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions

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104	<ul style="list-style-type: none"> • Operationalize unified command structure (Y2) • Systems to support an EOC capable of emergency response within 120 minutes of identification of a public health emergency established (Y5) 	Reference only - DO NOT FILL
105	<ul style="list-style-type: none"> • Mechanism for emergency preparedness and response coordinated (Y3) • Sustained OH preparedness for multi-sectoral rapid response to reports of disease outbreaks (Y4) • National capacity for OH preparedness in place (Y5) 	
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109	<ul style="list-style-type: none"> • Scope of activities and responsibilities for public health EOC evaluated (Y1) • OH preparedness framework for a multi-sectoral rapid response capabilities in EOCs developed (Y2) • OH preparedness framework for a multi-sectoral rapid response to reports of disease outbreaks implemented (Y3) 	Reference only - DO NOT FILL
110	<ul style="list-style-type: none"> • SOPs to support an EOC established (Y4) 	
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113			Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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118			**Adjustment has been made to the standard JEE language to reflect multisectoral

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118	, OH aspect of EPT.	

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1	<u>GHSA Phase 2 Monthly Reporting</u>	
2	PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS	P&R – ZD, WD, EOC FAO – ZD, WD, SURV, BSS, LAB, AMR, EOC
3	**Phase 2 countries have not finalized roadmaps, please provide updates against GHSA action pac	
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5	GHSA Action Package Indicators	Indicator Capacity Levels
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
7		Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
8		Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
9		Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
10		Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
11	One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
12		Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education
16		Level 1: No mechanism in place

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17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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23			All Other Relevant Updates
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
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31	Surveillance of infections caused by AMR pathogens		Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens

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32	ANTIMICROBIAL R		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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34		Antimicrobial stewardship activities	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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39		All Other Relevant Updates	
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42	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
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45			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.

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46	BIOSAFETY AND BIOSECURITY (BSS)		Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47			Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
48			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
49		Biosafety and biosecurity training and practices	Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
50			Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually. Training on emergency response procedures provided annually.
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55			Level 1: No indicator or event-based surveillance systems in place
56			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
57			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
58			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61			Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62	Surveillance is an interoperable, interconnected, electric real-time reporting system		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted,		Level 1: No reports related to data collection

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66	and disseminated	Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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72	All Other Relevant Updates	
73	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
74		Level 2: National laboratory system is capable of conducting 1-2 core tests
75		Level 3: National laboratory system is capable of conducting 3-4 core tests
76		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
77		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
78	Laboratory Quality System	Level 1: There are no national laboratory quality standards
79		Level 2: National quality standards have been developed but there is no system for verifying their implementation
80		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
81		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
82		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is

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84		All Other Relevant Updates	
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86			Level 1: No health workforce strategy exists
87			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
88		Workforce strategy	Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
89			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
90			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
91			Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
92			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
93		Human resources are available to implement IHR/PVS core capacity requirements	Level 3: Multidisciplinary HR capacity is available at national and intermediate level
94			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)
95			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
96			Level 1: No FETP or applied epidemiology training program established
97			Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)

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98	ENCY OPERATIONS CENTER (EOC)*	Applied epidemiology training program in place such as FETP	<p>Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement</p> <p>Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement</p> <p>Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding</p>
99		All Other Relevant Updates	
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104		Emergency Operations Program	<p>Level 1: No exercises have been completed</p> <p>Level 2: Table top exercise has been completed to test systems and decision making</p> <p>Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency</p> <p>Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions</p> <p>Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented</p>
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109		Emergency Operations Centre Operating Procedures and Plans	<p>Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place</p> <p>Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)</p> <p>Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison</p>
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112	EMERG		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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118		All Other Relevant Updates	
			**Adjustment has been made to the standard JEE language to reflect multisectoral, OH aspect of EPT.

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1		GHSA Phase 2 Monthly Reporting
2	PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS	P&R – ZD, WD, EOC FAO – ZD, WD, SURV, BSS, LAB, AMR, EOC
3	**Phase 2 countries have not finalized roadmaps, please provide updates against GHSA action pac	
4		
5	GHSA Action Package Indicators	Indicator Capacity Levels
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
7		Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
8		Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
9		Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
10		Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
11	One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
12		Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education
16		Level 1: No mechanism in place

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17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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23			All Other Relevant Updates
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
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30			Surveillance of infections caused by AMR pathogens
31			Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens

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32	ANTIMICROBIAL R		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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34		Antimicrobial stewardship activities	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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39		All Other Relevant Updates	
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42	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities. Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.
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46		Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47		Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
48		Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
49	Biosafety and biosecurity training and practices	Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above. Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually. Training on emergency response procedures provided annually.
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54	All Other Relevant Updates	

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55			Level 1: No indicator or event-based surveillance systems in place
56			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
57			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
58			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61			Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62	Surveillance is an interoperable, interconnected, electric real-time reporting system		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted,		Level 1: No reports related to data collection

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66	and disseminated	Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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72	All Other Relevant Updates	
73	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
74		Level 2: National laboratory system is capable of conducting 1-2 core tests
75		Level 3: National laboratory system is capable of conducting 3-4 core tests
76		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
77		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
78	Laboratory Quality System	Level 1: There are no national laboratory quality standards
79		Level 2: National quality standards have been developed but there is no system for verifying their implementation
80		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
81		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
82		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is

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84		All Other Relevant Updates	
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86			Level 1: No health workforce strategy exists
87			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
88		Workforce strategy	Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
89			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
90			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
91			Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
92			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
93		Human resources are available to implement IHR/PVS core capacity requirements	Level 3: Multidisciplinary HR capacity is available at national and intermediate level
94			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)
95			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
96			Level 1: No FETP or applied epidemiology training program established
97			Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)

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98	ENCY OPERATIONS CENTER (EOC)*	Applied epidemiology training program in place such as FETP	<p>Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement</p> <p>Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement</p> <p>Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding</p>
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104		Emergency Operations Program	<p>Level 1: No exercises have been completed</p> <p>Level 2: Table top exercise has been completed to test systems and decision making</p> <p>Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency</p> <p>Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions</p> <p>Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented</p>
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109		Emergency Operations Centre Operating Procedures and Plans	<p>Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place</p> <p>Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)</p> <p>Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison</p>
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112	EMERG		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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118		All Other Relevant Updates	
			**Adjustment has been made to the standard JEE language to reflect multisectoral, OH aspect of EPT.

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1		GHSA Phase 2 Monthly Reporting
2	PREDICT: ZD, SURV, BSS, LAB OHW: WD, ZD, BSS	P&R – ZD, WD, EOC FAO – ZD, WD, SURV, BSS, LAB, AMR, EOC
3	**Phase 2 countries have not finalized roadmaps, please provide updates against GHSA action pac	
4		
5	GHSA Action Package Indicators	Indicator Capacity Levels
6	Surveillance systems in place for priority zoonotic diseases and pathogens	Level 1: No mechanism in place
7		Level 2: Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place
8		Level 3: Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern
9		Level 4: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern
10		Level 5: Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement
11	One Health Workforce** (Veterinary or Animal Health Workforce)	Level 1: Country has no one health workforce capacity (with animal health experts) capable of conducting one health activities.
12		Level 2: Country has one health workforce capacity (with animal health experts) within the national public health system.
13		Level 3: One health workforce capacity (with animal health experts) within the national public health system and less than half of sub-national levels.
14		Level 4: One health workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels.
15		Level 5: One health workforce capacity (with animal health experts) within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education
16		Level 1: No mechanism in place

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17	Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional		Level 2: National policy, strategy or plan for the response to zoonotic events is in place Level 3: A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
18			Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
19			Level 5: Timely (as defined by national standards) response to more than 80% of zoonotic events of potential national and international public health concern
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23			All Other Relevant Updates
24	Antimicrobial resistance (AMR) detection		Level 1: No national plan for detection and reporting of priority AMR pathogens has been approved
25			Level 2: National plan for detection and reporting of priority AMR pathogens has been approved
26			Level 3: Designated laboratories are conducting detection and reporting of some priority AMR pathogens
27			Level 4: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year
28			Level 5: Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement
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30			Surveillance of infections caused by AMR pathogens
31			Level 1: No national plan for surveillance of infections caused by priority AMR pathogens has been approved Level 2: National plan for surveillance of infections caused by priority AMR pathogens has been approved Level 3: Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens

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32	ANTIMICROBIAL R		Level 4: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year Level 5: Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement
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34		Antimicrobial stewardship activities	Level 1: No national plan for antimicrobial stewardship has been approved Level 2: National plan for antimicrobial stewardship has been approved Level 3: Designated centers are conducting some antimicrobial stewardship practices Level 4: Designated centers have conducted all antimicrobial stewardship practices for at least one year Level 5: Designated centers have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement
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39		All Other Relevant Updates	
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42	Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities		Level 1: No elements of a comprehensive national BSS are in place Level 2: Some elements of a comprehensive BSS are in place. Country is starting to monitor and develop an inventory of pathogens within facilities appropriate for storing dangerous elements; developing comprehensive national BSS legislation, laboratory licensing and pathogen control measures Level 3: Comprehensive national BSS is being developed. Country is finalizing process of actively monitoring and maintaining up-to-date inventories of pathogens within appropriate facilities.
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45			Level 4: BSS is developed, but not sustainable. Country is monitoring and maintaining an updated inventory of pathogens within appropriate facilities.

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46	BIOSAFETY AND BIOSECURITY (BSS)		Level 5: Sustainable BSS is in place. Country is compliant with numbers one through six under “Demonstrated Capacity,” and ministries have made available adequate funding and political support for the comprehensive national BSS, including maintenance of facilities and equipment
47			Level 1: No BSS training or plans are in place Level 2: Country has conducted a training needs assessment and identified gaps in BSS training but has not yet implemented comprehensive training or a common training curriculum. General lack of awareness among the laboratory workforce of international BSS best practices for safe/secure conduct. Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
48			Level 3: Country has a training program in place with common curriculum (has begun implementation). Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins; Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins. Country is developing, or has not yet implemented, a train-the-trainers program for biosafety. Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
49		Biosafety and biosecurity training and practices	Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins; Training on BSS has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.
50			Level 5: Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols: Country is compliant with numbers one through five under “Demonstrated Capacity” and has funding and capacity to sustain all of the above. Review of training needs assessment is conducted annually and refresher training on need areas conducted annually. Training on emergency response procedures provided annually.
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53		All Other Relevant Updates	
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55			Level 1: No indicator or event-based surveillance systems in place
56			Level 2: Indicator and event-based surveillance system(s) planned to begin within a year
57			Level 3: Indicator or event-based surveillance system(s) in place to detect public health threats
58			Level 4: Indicator and event-based surveillance system(s) in place to detect public health threats
59			Level 5: In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support
60			Level 1: No interoperable, interconnected, electronic real-time reporting system exists
61			Level 2: Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems
62	Surveillance is an interoperable, interconnected, electric real-time reporting system		Level 3: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.
63			Level 4: Country has in place an interoperable, interconnected, electronic real-time reporting system, for either public health, health or veterinary surveillance systems. The system is not yet fully sustained by host government
64			Level 5: Country has in place an interoperable, interconnected, electronic real-time reporting system, including both the public health or veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stakeholders according to country policies and international obligations
65	Analysis of surveillance data for priority disease/syndrome is analyzed, interpreted,		Level 1: No reports related to data collection

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66	and disseminated	Level 2: Sporadic reports related to data collection with delay Level 3: Regular reporting of data with some delay; ad-hoc teams put in place to analyze data Level 4: Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data Level 5: Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting
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72	All Other Relevant Updates	
73	Laboratory testing for detection of priority diseases	Level 1: National laboratory system is not capable of conducting any core tests
74		Level 2: National laboratory system is capable of conducting 1-2 core tests
75		Level 3: National laboratory system is capable of conducting 3-4 core tests
76		Level 4: National laboratory system is capable of conducting five or more of the ten core tests
77		Level 5: In addition to achieving “demonstrated capacity”, country has national system for procurement and quality assurance
78	Laboratory Quality System	Level 1: There are no national laboratory quality standards
79		Level 2: National quality standards have been developed but there is no system for verifying their implementation
80		Level 3: A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
81		Level 4: Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
82		Level 5: Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is

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84		All Other Relevant Updates	
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86			Level 1: No health workforce strategy exists
87			Level 2: A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
88		Workforce strategy	Level 3: A public and animal health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
89			Level 4: A public and animal health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
90			Level 5: “Demonstrated Capacity” has been achieved, public and animal health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system
91			Level 1: Country doesn't have multidisciplinary HR capacity required for implementation of IHR/PVS core capacities
92			Level 2: Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level
93		Human resources are available to implement IHR/PVS core capacity requirements	Level 3: Multidisciplinary HR capacity is available at national and intermediate level
94			Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained)
95			Level 5: Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally
96			Level 1: No FETP or applied epidemiology training program established
97			Level 2: No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)

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98	ENCY OPERATIONS CENTER (EOC)*	Applied epidemiology training program in place such as FETP	<p>Level 3: One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement</p> <p>Level 4: Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement</p> <p>Level 5: Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding</p>
99		All Other Relevant Updates	
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104		Emergency Operations Program	<p>Level 1: No exercises have been completed</p> <p>Level 2: Table top exercise has been completed to test systems and decision making</p> <p>Level 3: Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency</p> <p>Level 4: EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions</p> <p>Level 5: In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented</p>
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109		Emergency Operations Centre Operating Procedures and Plans	<p>Level 1: No EOC plans/procedures for Incident Management Structure (or equivalent) are in place</p> <p>Level 2: EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)</p> <p>Level 3: In addition to meeting requirements of “limited capacity”, EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison</p>
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112	EMERG		Level 4: In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions Level 5: In addition to meeting “demonstrated capacity”, response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources
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			**Adjustment has been made to the standard JEE language to reflect multisectoral, OH aspect of EPT.

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